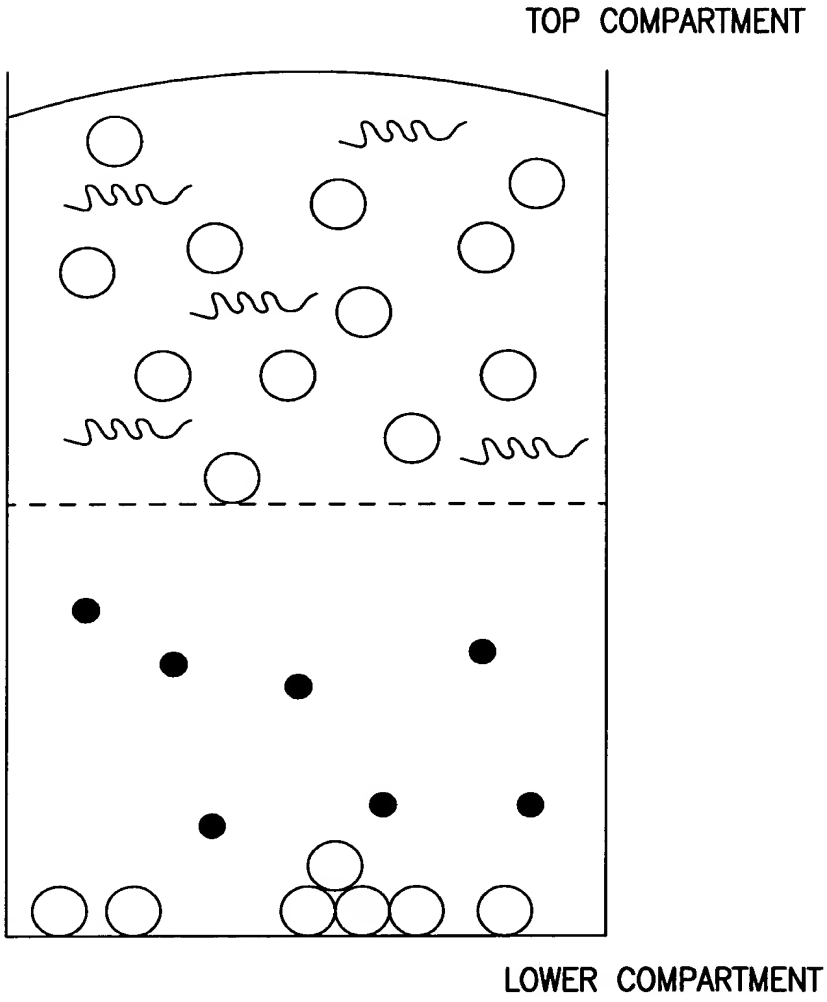

FIG. 1

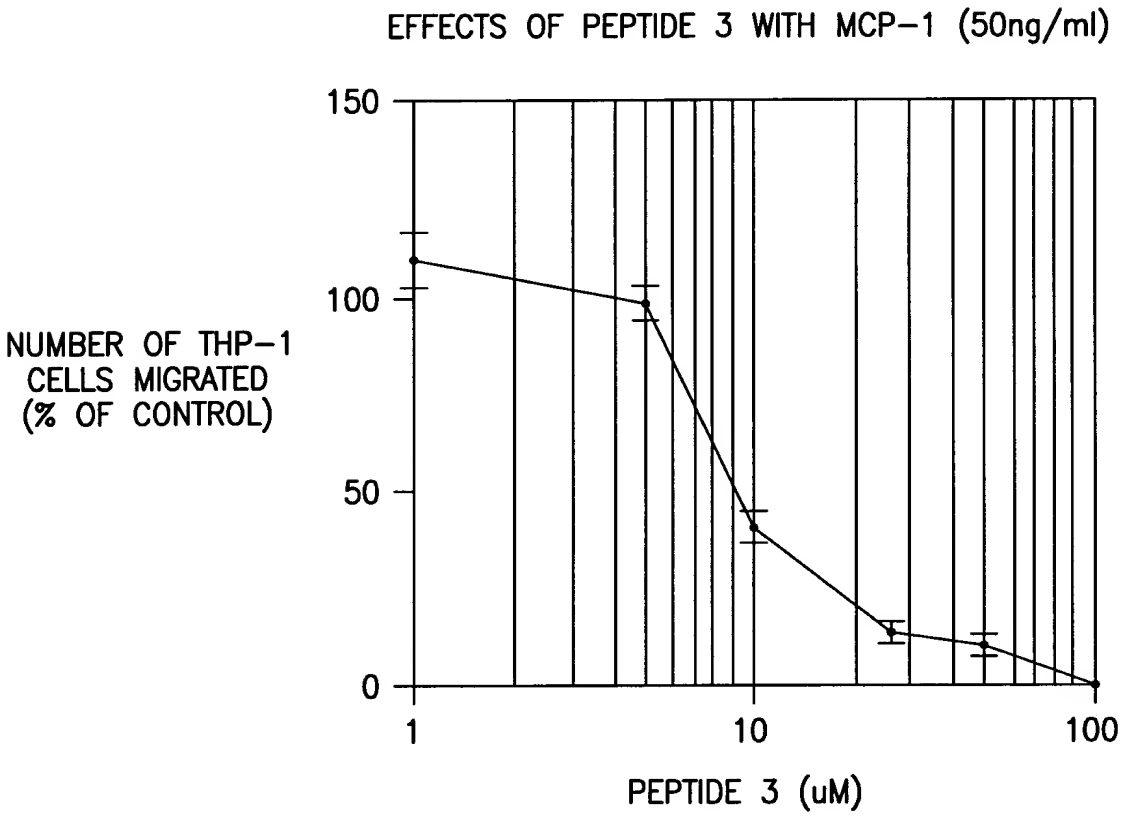
EFFECTS OF PEPTIDE 3 WITH MCP-1 (50ng/ml)
NUMBER OF THP-1 CELLS MIGRATED (% OF CONTROL)
150
100
50
0
1
10
100
PEPTIDE 3 (uM)

FIG. 2

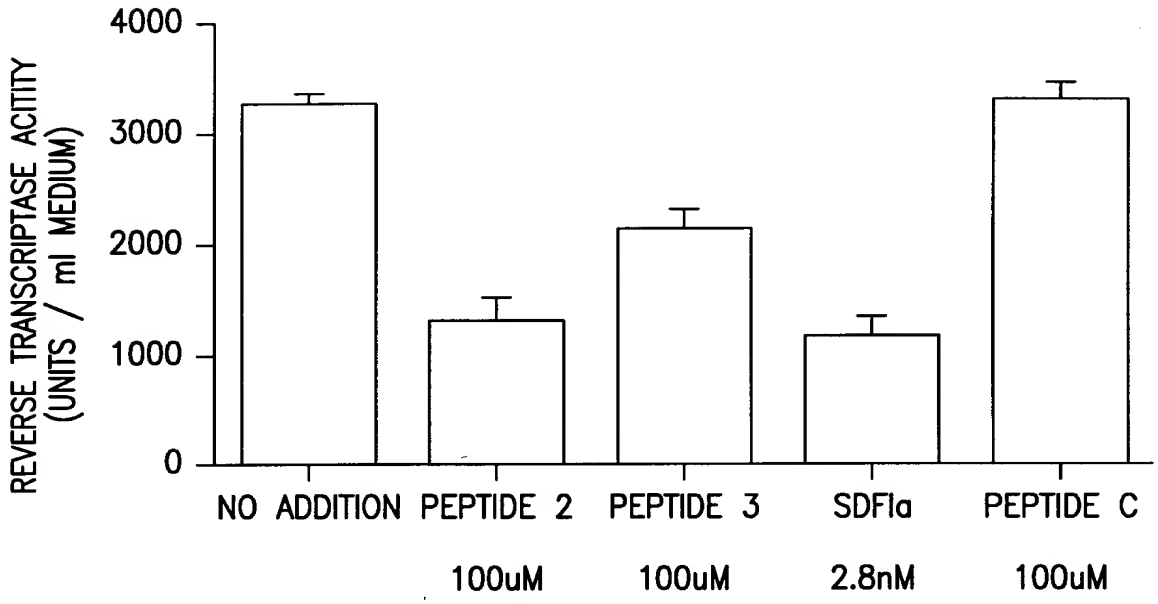
REVERSE TRANSCRIPTASE ACITITY
(UNITS / ml MEDIUM)
4000
3000
2000
1000
0
NO ADDITION
PEPTIDE 2
100uM
PEPTIDE 3
100uM
SDF1a
2.8nM
PEPTIDE C
100uM

FIG. 3

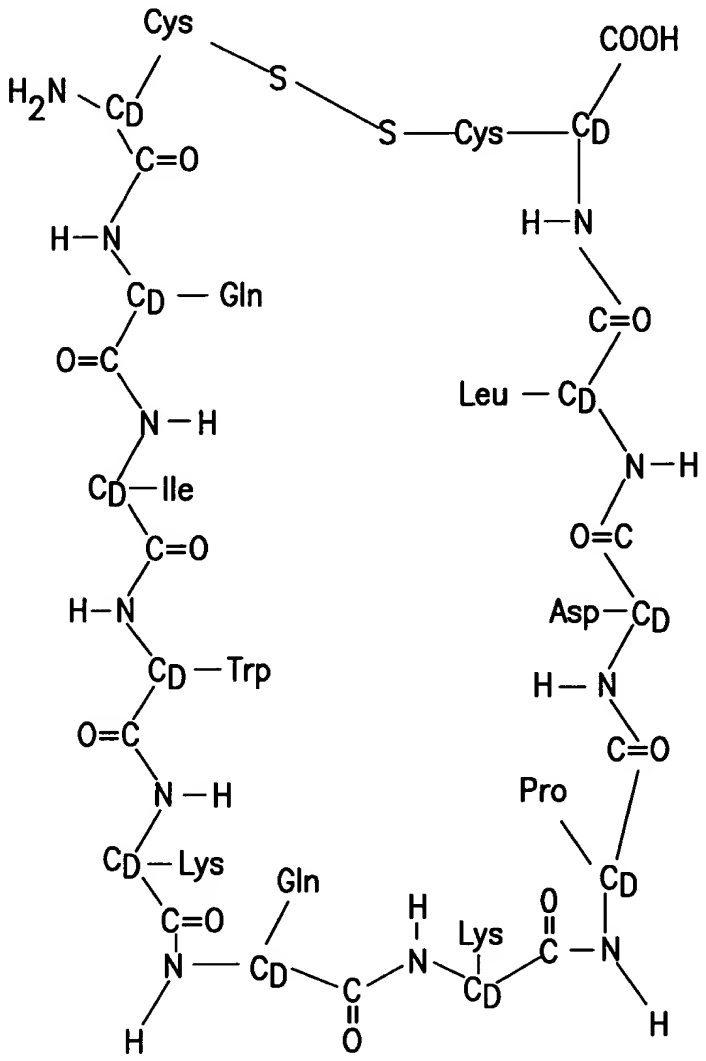
Cys
S
S
Cys
COOH
H_2N
C_D
C=O
H—N
C_D — Gln
O=C
N—H
C_D—Ile
C=O
H—N
C_D — Trp
O=C
N—H
C_D — Lys
C=O
N
C_D
C
O
H
Gln
H
N
Lys
C_D
O
C
N
H
H—N
C=O
Leu — C_D
N—H
O=C
Asp—C_D
H— N
C=O
Pro
C_D

FIG. 4

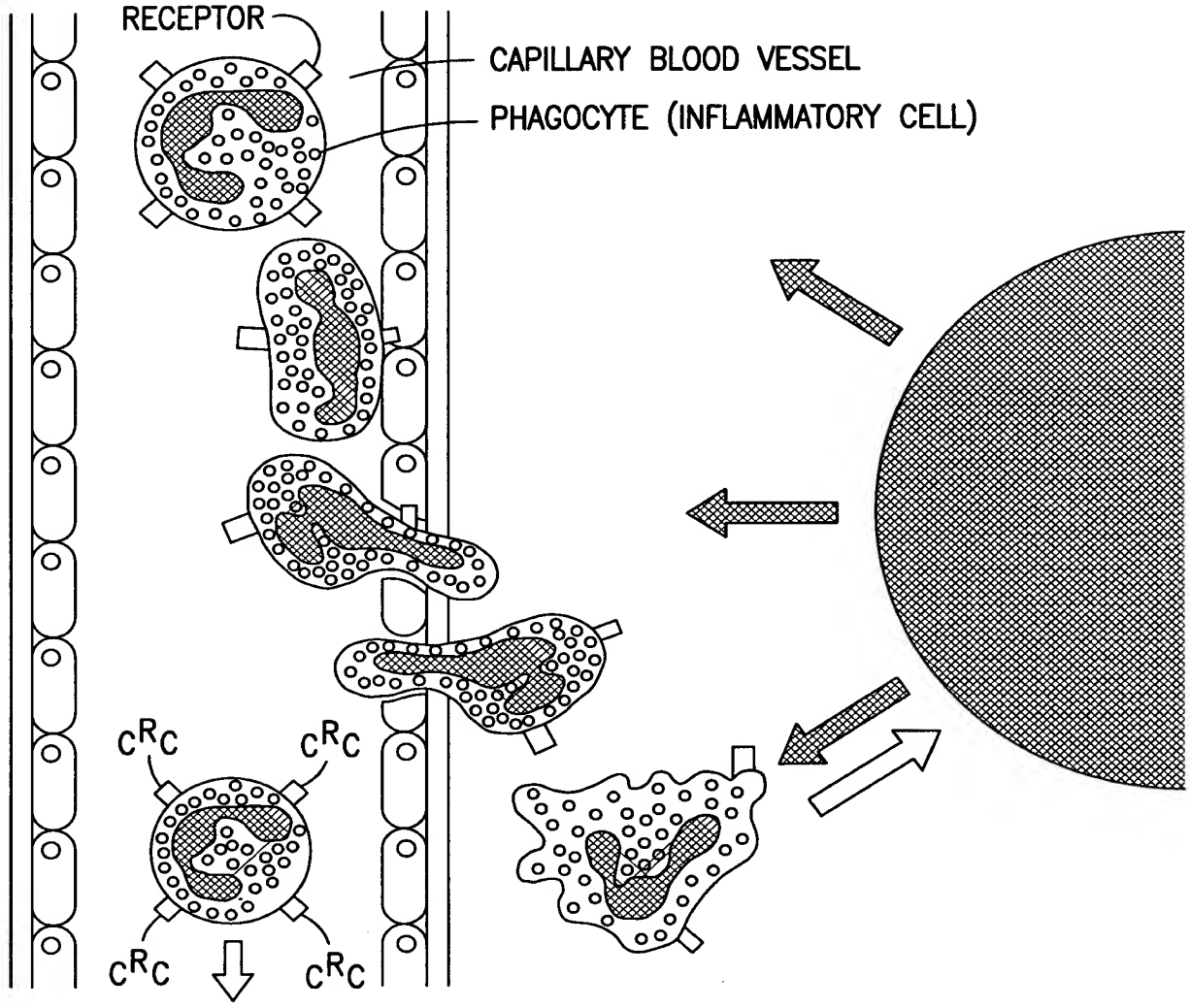
RECEPTOR
CAPILLARY BLOOD VESSEL
PHAGOCYTE (INFLAMMATORY CELL)
cRc
cRc
cRc
cRc

FIG. 5

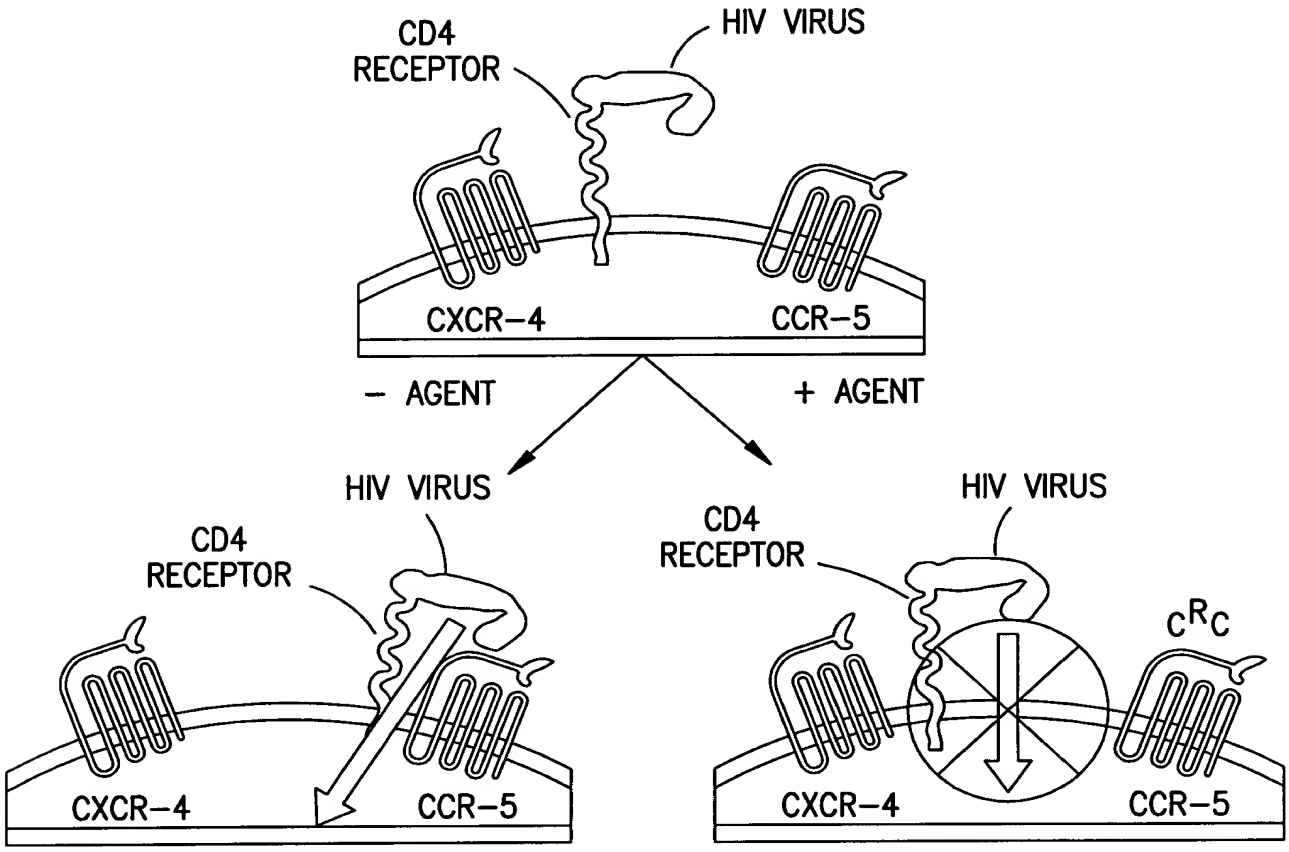
CD4
RECEPTOR
HIV VIRUS
CXCR-4
CCR-5
- AGENT
+ AGENT
HIV VIRUS
CD4
RECEPTOR
CXCR-4
CCR-5
HIV VIRUS
CD4
RECEPTOR
CXCR-4
CCR-5

FIG. 6

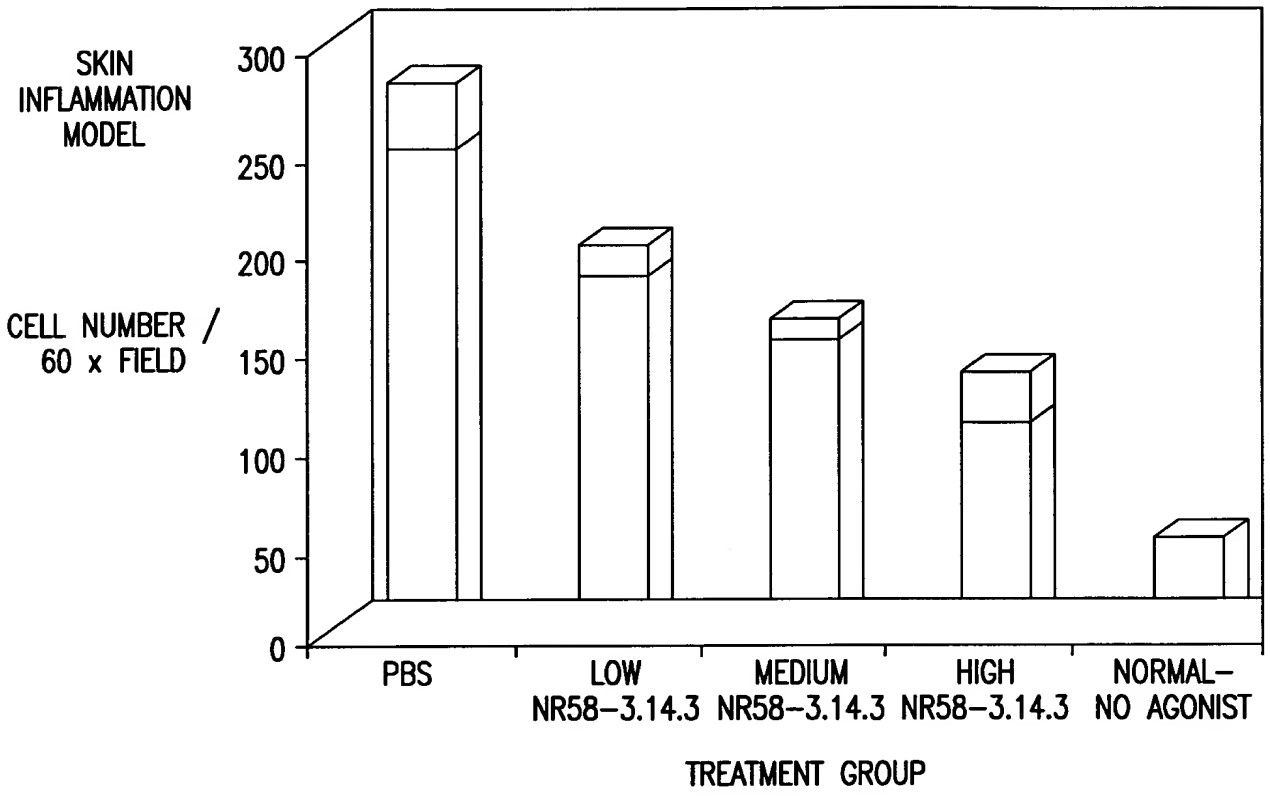
SKIN INFLAMMATION MODEL
CELL NUMBER / 60 x FIELD
300
250
200
150
100
50
0
PBS
LOW NR58-3.14.3
MEDIUM NR58-3.14.3
HIGH NR58-3.14.3
NORMAL- NO AGONIST
TREATMENT GROUP

FIG. 7A

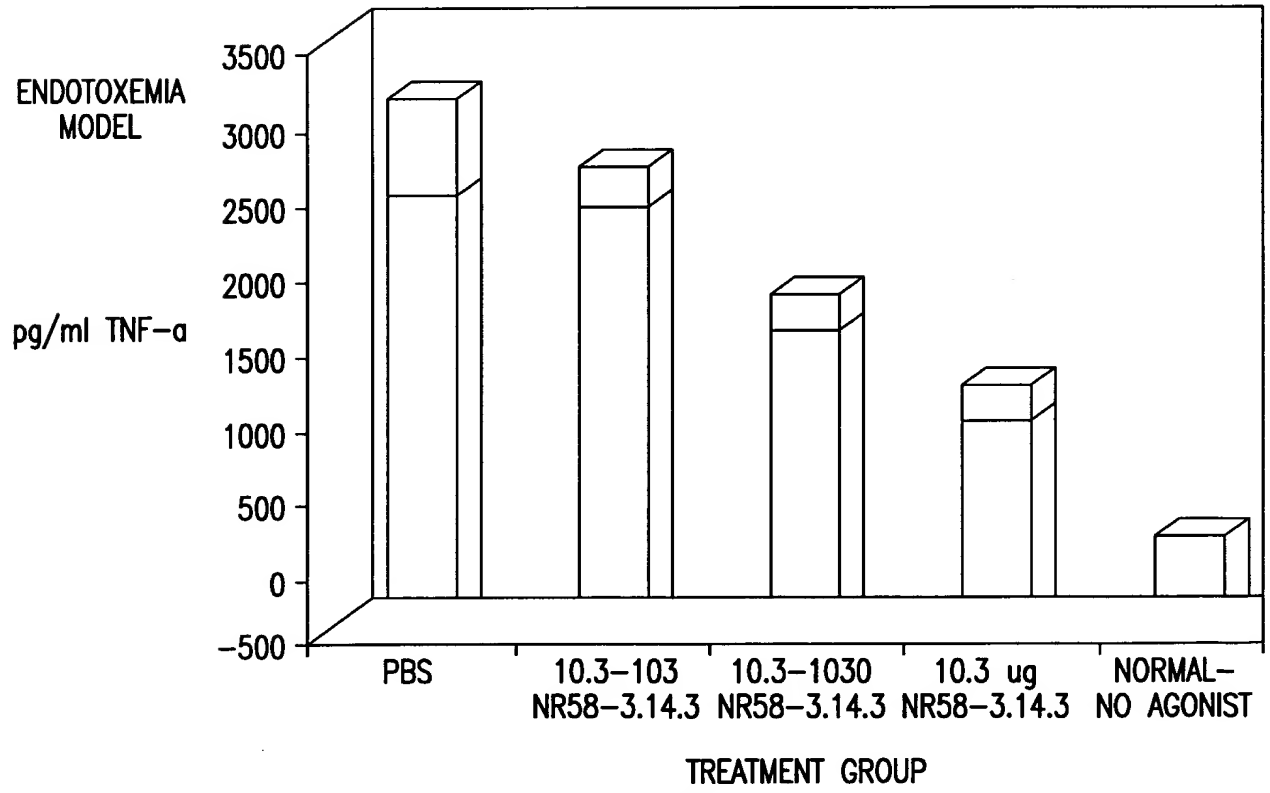
ENDOTOXEMIA MODEL
pg/ml TNF-a
3500
3000
2500
2000
1500
1000
500
0
-500
PBS
10.3-103 NR58-3.14.3
10.3-1030 NR58-3.14.3
10.3 ug NR58-3.14.3
NORMAL- NO AGONIST
TREATMENT GROUP

FIG. 7B

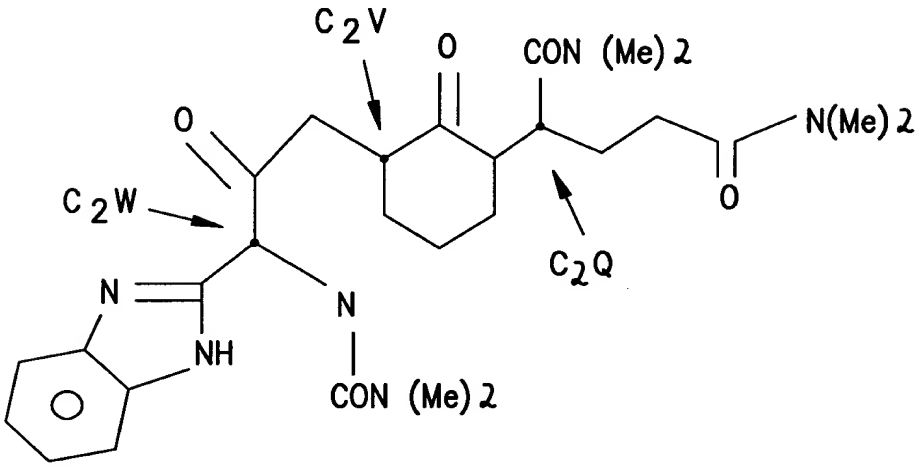
C 2 V
O
CON (Me) 2
O
N(Me) 2
C 2 W
O
C 2 Q
N
N
NH
CON (Me) 2

FIG. 8

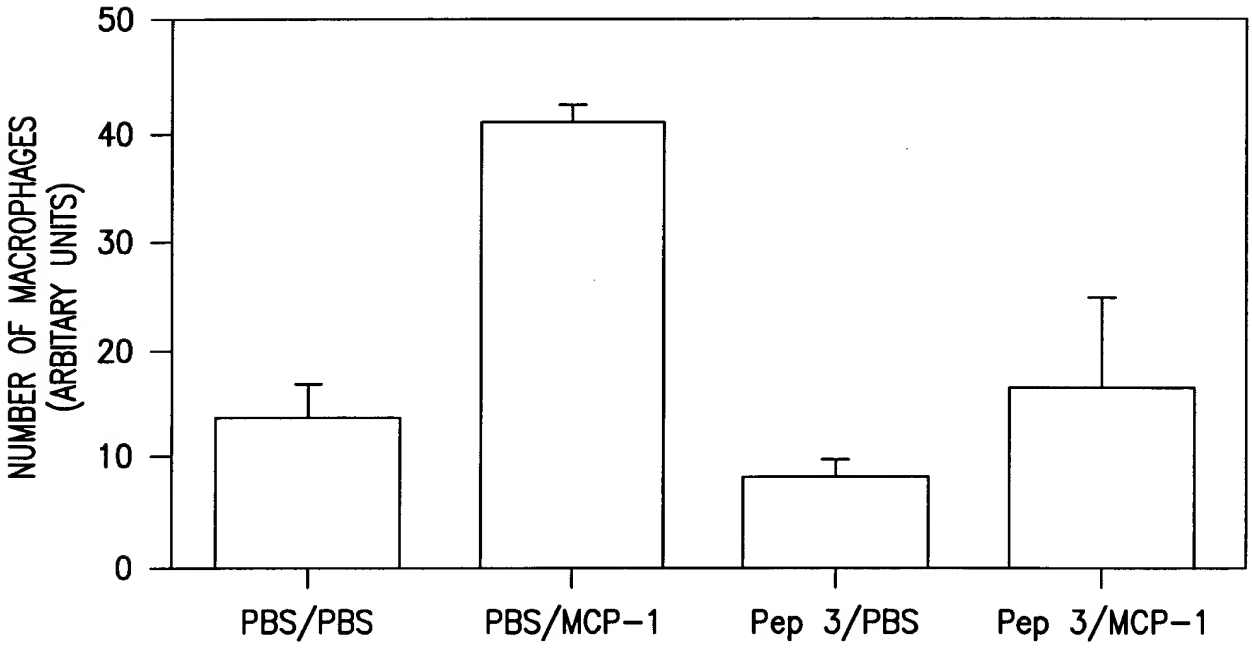
NUMBER OF MACROPHAGES
(ARBITARY UNITS)
50
40
30
20
10
0
PBS/PBS
PBS/MCP-1
Pep 3/PBS
Pep 3/MCP-1

FIG. 9

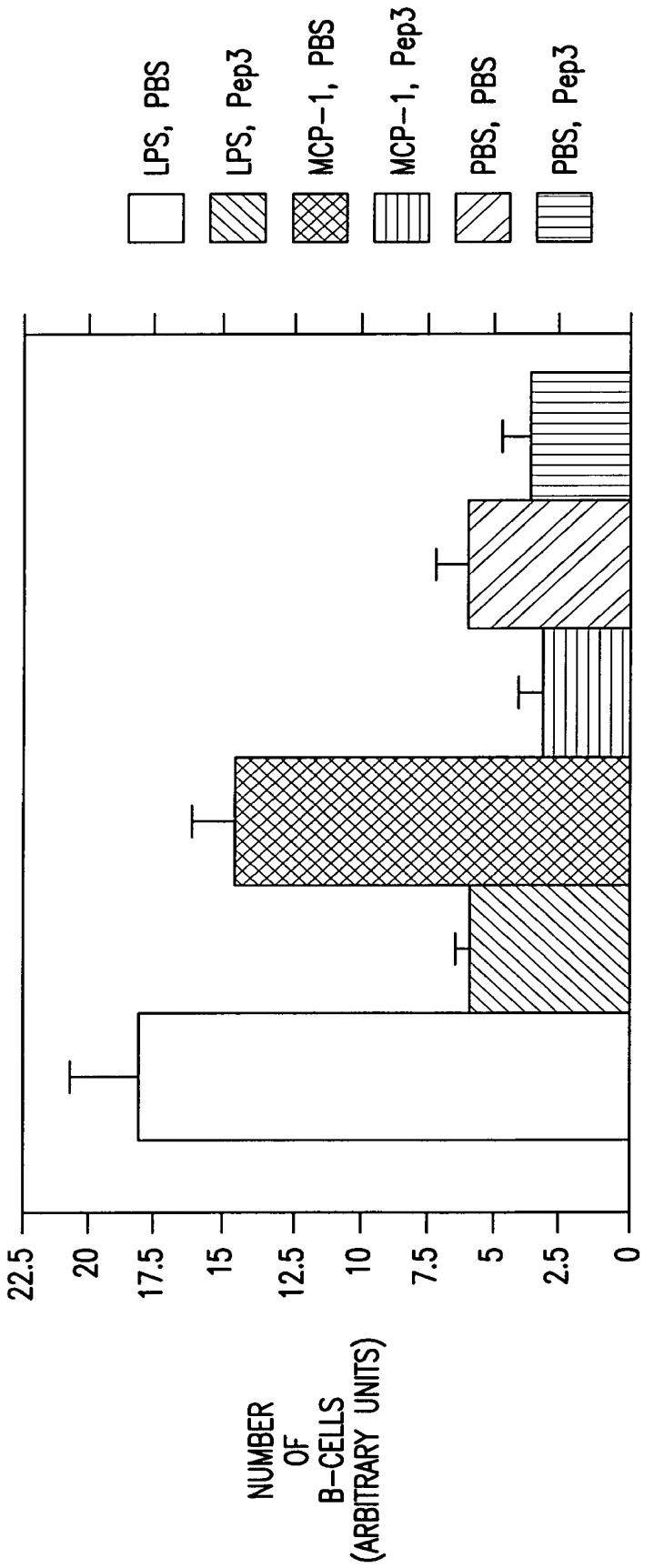
LPS, PBS
LPS, Pep3
MCP-1, PBS
MCP-1, Pep3
PBS, PBS
PBS, Pep3
B LYMPH
NUMBER OF B-CELLS (ARBITRARY UNITS)
22.5
20
17.5
15
12.5
10
7.5
5
2.5
0

FIG. 10

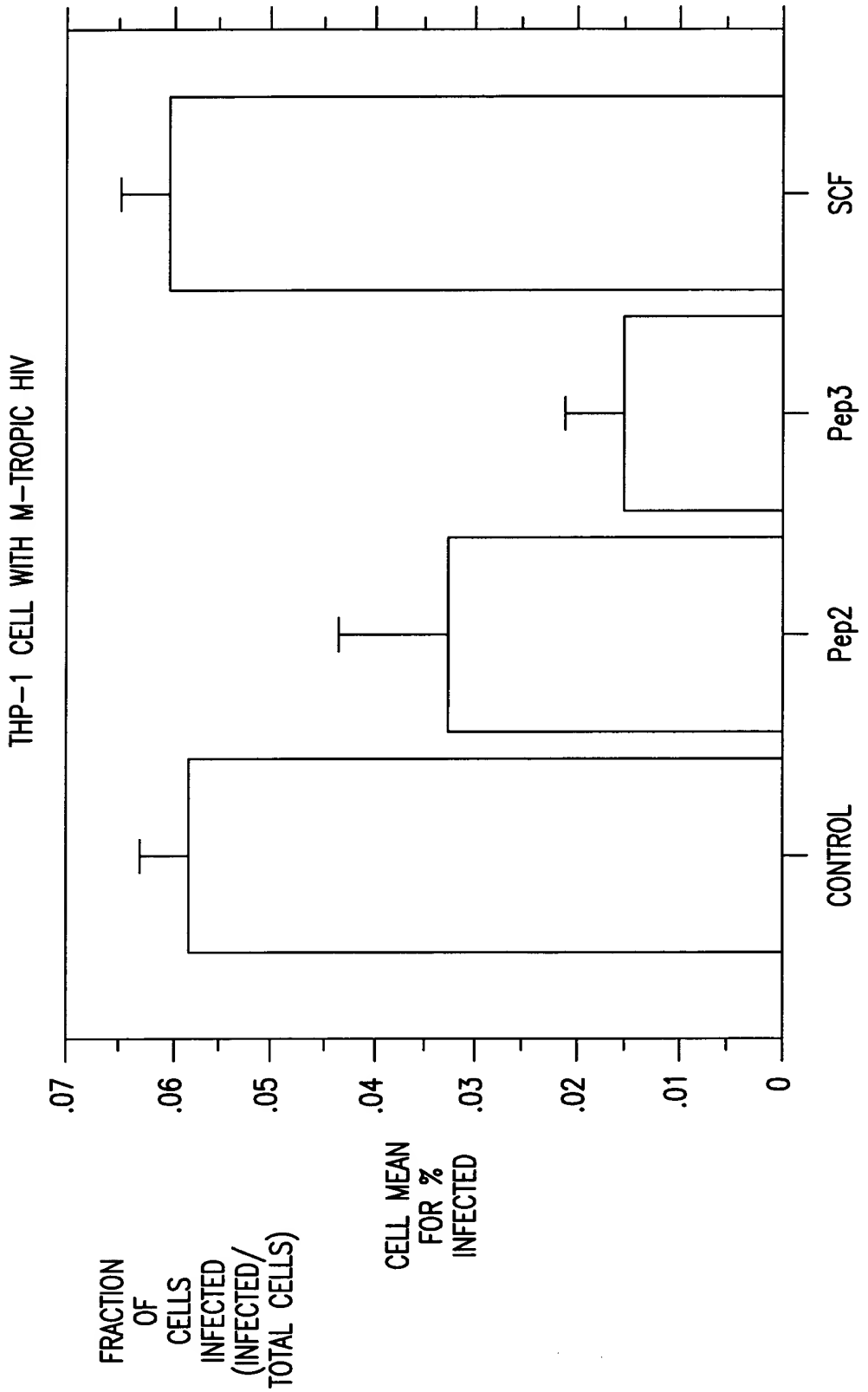
THP-1 CELL WITH M-TROPIC HIV
FRACTION OF CELLS INFECTED (INFECTED/ TOTAL CELLS)
CELL MEAN FOR % INFECTED
.07
.06
.05
.04
.03
.02
.01
0
CONTROL
Pep2
Pep3
SCF

FIG. 11

Amino Acid	Codon
Phe	UUU, UUC
Ser	UCU, UCC, UCA, UCG, AGU, AGC
Tyr	UAU, UAC
Cys	UGU, UGC
Leu	UUA, UUG, CUU, CUC, CUA, CUG
Trp	UGG
Pro	CCU, CCC, CCA, CCG
His	CAU, CAC
Arg	CGU, CGC, CGA, CGG, AGA, AGG
Gln	CAA, CAG
Ile	AUU, AUC, AUA
Thr	ACU, ACC, ACA, ACG
Asn	AAU, AAC
Lys	AAA, AAG
Met	AUG
Val	GUU, GUC, GUA, GUG
Ala	GCU, GCC, GCA, GCG
Asp	GAU, GAC
Gly	GGU, GGC, GGA, GGG
Glu	GAA, GAG

FIG. 12

Original Residue	Exemplary Substitutions	Preferred Substitutions
Ala (A)	val; leu; ile	val
Arg (R)	lys; gln; asn	lys
Asn (N)	gln; his; lys; arg	gln
Asp (D)	glu	glu
Cys (C)	ser	ser
Gln (Q)	asn	asn
Glu (E)	asp	asp
Gly (G)	pro	pro
His (H)	asn; gln; lys; arg	arg
Ile (I)	leu; val; met; ala; phe norleucine	leu
Leu (L)	norleucine; ile; val; met; ala; phe	ile
Lys (K)	arg; gln; asn	arg
Met (M)	leu; phe; ile	leu
Phe (F)	leu; val; ile; ala	leu
Pro (P)	gly	gly
Ser (S)	thr	thr
Thr (T)	ser	ser
Trp (W)	tyr	tyr
Tyr (Y)	trp; phe; thr; ser	phe
Val (V)	ile; leu; met; phe; ala; norleucine	leu

FIG. 13

PEPTIDE–3

LFL peptide 3(1-12)[MCP-1]: Residues 50-61 of mature hMCP-1
E-I-C-A-D-P-K-Q-K-W-V-Q (SEQ. ID. NO.: 1)
L amino acids

LFL peptide 3(3-12)[MCPI] Residues 52-61 of mature hMCP-1
C-A-D-P-K-Q-K-W-V-Q (SEQ. ID. NO.: 7)
L amino acids

LFL peptide 3(1-6)[MCP1]: Residues 50-55 of mature hMCP-1
E-I-C-A-D-P (SEQ. ID. NO.: 8)
L amino acids

LFL peptide 3(7-12)[MCP1]: Residues 56-61 of mature hMCP-1
K-Q-K-W-V-Q (SEQ. ID. NO.: 9)
L amino acids

LFL Leu_4peptide3(1-12)[MCP-1]
E-I-C-L-D-P-K-Q-K-W-V-Q (SEQ. ID. NO.: 10)
L amino acids

LFL Ser_7peptide3(1-12)[MCP-1]
E-I-C-A-D-P-S-Q-K-W-V-Q (SEQ. ID. NO.: 11)
L amino acids

LFL Ile_{11}peptide3(1-12)[MCP-1]
E-I-C-A-D-P-K-Q-K-W-I-Q (SEQ. ID. NO.: 13)
L amino acids

LFL Leu_4Ile_{11}peptide3(1-12)[MCP-1]
E-I-C-L-D-P-K-Q-K-W-I-Q (SEQ. ID. NO.: 14)
L amino acids

CFL $Cys_0Leu_4Ile_{11}Cys_{13}$peptide3(1-12)[MCP-1]
C-E-I-C-L-D-P-K-Q-K-W-I-Q-C (SEQ. ID. NO.: 106)
L amino acids

LRD Leu_4Ile_{11} peptide 3(1-12)[MCP-1]
q-i-w-k-q-k-p-d-l-c-i-e
D amino acids

FIG. 14A

CRD $Cys_0Leu_4Ile_{11}Cys_{13}$peptide 3(1-12)[MCP-1]
c-q-i-w-k-q-k-p-d-l-c-i-e-c
D amino acids

LFL $Ser_7Glu_8Glu_9$peptide3(1-12)[MCP1):Residues 50-61 of mature hMIP1α
E-I-C-A-D-P-S-E-E-W-V-Q (SEQ. ID. NO.: 12)
L amino acids

LFL peptide3(10-12)[MCP-1]
W-V-Q
L amino acids

CFL Cys_0Cys_4 peptide3(10-12)[MCP-1]
C-W-V-Q-C (SEQ. ID. NO.: 107)
L amino acids

LRD peptide3(10-12)[MCP-1]
q-v-w
D amino acids

LFL peptide3(7-9)[MCP-1]
K-Q-K
L amino acids

LRD peptide3(7-9)[MCP-1]
k-q-k
D amino acids

LFL peptide 3(7-9)[MIP1α](MIP1α specific inhibitor)
S-E-E
L amino acids

LRD peptide3(7-9)[MIP1α] (MIP1α specific inhibitor)
e-e-s
D amino acids

LFL peptide3(7-9)[IL-8](IL-8 specific inhibitor)
K-E-N
L amino acids

LRD peptide3(7-9)[IL-8](IL-8 specific inhibitor)
n-e-k
D amino acids

FIG. 14B

LFL peptide3(7-9)[SDF-1α](SDF-1α specific inhibitor)
K-L-K
L amino acids

LRD peptide3(7-9)[SDF1α] (SDF-1α specific inhibitor)
k-l-k
D amino acids

LFL $Leu_4Ile_{11}Cys_{13}$ peptide3(3-12)[MCP-1]
L-D-P-K-Q-K-W-I-Q-C (SEQ. ID. NO.: 84)
L amino acids

CRD $Leu_4Ile_{11}Cys_{13}$ peptide3(3-12)[MCP-1]
c-q-i-w-k-q-k-p-d-l-c
D amino acids

^{3}H-Ala CRD-Leu_4Ile_{11} Cys_{13} peptide 3(3-12)[MCP-1](D-Ala attached to Asp residue of CRD-$Leu_4Ile_{11}Cys_{13}$ peptide 3(3-12)[MCP-1])

^{3}H-L-Leu LRD Cys_{13} peptide3(3-12)[MCP-1]
c-q-i-w-k-q-k-p-d-L-c
D and L amino acids

LFL SES
S-E-S
L amino acids

LFL KKK
K-K-K
L amino acids

LFL Cys_4 peptide3(10-12)[MCP-1]
W-V-Q-C (SEQ. ID. NO.: 85)
L amino acids

LRD Cys_4 peptide3(10-12)[MCP-1]
c-q-v-w
D amino acids

LFL $Ile_{11}Cys_{13}$peptide3(10-12)[MCP-1]
W-I-Q-C (SEQ. ID. NO.: 86)
L amino acids

FIG. 14C

LRD $Cys_{13}Ile_{11}$peptide3(10-12)[MCP-1]
cqiw
D amino acids

LRD peptide3(7-12)[MCP-1]
q-v-w-k-q-k
D amino acids

CFL Cys_0Cys_{13}peptide3(7-12)[MCP-1]
C-K-Q-K-W-V-Q-C (SEQ. ID. NO.: 108)
L amino acids

CRD Cys_0Cys_{13}peptide3(7-12)[MCP-1]
c-q-v-w-k-q-k-c
D amino acids

LFL peptide3(10-12)[RANTES]
WVR
L amino acids

LRD peptide3(10-12)[RANTES]
rvw
D amino acids

LFL peptide3(10-12)[SDF-1]
W-I-Q
L amino acids

Peptide 2

LFL peptide 2(1-15)[MCP-1]: Residues 28-42 of hMCP-1
S-Y-R-R-I-T-S-S-K-C-P-K-E-A-V (SEQ. ID. NO.: 105)
L amino acids

CFL Cys_0Cys_{16}peptide 2(1-15)[MCP-1]: Residues 28-42 of hMCP-1
C-S-Y-R-R-I-T-S-S-K-C-P-K-E-A-V-C (SEQ. ID. NO.: 109)
L amino acids

LRD peptide 2(1-15)[MCP-1]: Residues 28-42 of hMCP-1
v-a-e-k-p-c-k-s-s-t-i-r-r-y-s
D amino acids

FIG. 14D

CRD Cys_0Cys_{16}peptide 2(1-15)[MCP-1]: Residues 28-42 of hMCP-1
c-v-a-e-k-p-c-k-s-s-t-i-r-r-y-s-c
D amino acids

LFL peptide 2(1-15)[SDF1]: Residues 26-40 of mature hSDF-1β
H-L-K-I-L-N-T-P-N-C-A-L-Q-I-V (SEQ. ID. NO.: 103)
L amino acids

CFL Cys_0Cys_{16}peptide 2(1-15)[SDF1]: Residues 26-40 of mature hSDF-1β
C-H-L-K-I-L-N-T-P-N-C-A-L-Q-I-V-C (SEQ. ID. NO.: 110)
L amino acids

LRD peptide 2(1-15)[SDF1]: Residues 26-40 of mature hSDF-1β
v-i-q-l-a-c-n-p-t-n-l-i-k-l-h
D amino acids

CRD Cys_0Cys_{16}peptide 2(1-15)[SDF1]: Residues 26-40 of mature hSDF-1β
c-v-i-q-l-a-c-n-p-t-n-l-i-k-l-h-c
D amino acids

LFL peptide 2(1-14)[MIP-1α]: Residues 28-41 of hMIP-1α
D-Y-F-E-T-S-S-Q-C-S-K-P-G-V (SEQ. ID. NO.: 5)
L amino acids

LRD peptide 2(1-14)[MIP1α]: Residues 28-41 of mature hMIP1α
v-g-p-k-s-c-q-s-s-t-e-f-y-d
D amino acids

LFL peptide 2(1-16)[IL8]: Residues 27-42 of mature hIL8
E-L-R-V-I-E-S-G-P-H-C-A-N-T-E-I (SEQ. ID. NO.: 6)
L amino acids

LFL Peptide 2(1-10)[MCP-1]: Residues 28-37 of hMCP-1
S-Y-R-R-I-T-S-S-K-C (SEQ. ID. NO.: 87)
L amino acids

LFL peptide 2(10-15)[MCP-1]: Residues 37-42 of hMCP-1
C-P-K-E-A-V (SEQ. ID. NO.: 88)
L amino acids

LFL peptide 2(1-5)[MCP-1]: Residues 28-32 of hMCP-1
S-Y-R-R-I (SEQ. ID. NO.: 89)
L amino acids

FIG. 14E

LFL peptide 2(6-10)[MCP-1]: Residues 33-37 of hMCP-1
T-S-S-K-C (SEQ. ID. NO.: 90)
L amino acids

LFL peptide 2(1-9)[MIP-1α]: Residues 28-36 of hMIP-1α
D-Y-F-E-T-S-S-Q-C (SEQ. ID. NO.: 91)
L amino acids

LFL peptide 2(9-14)[MIP-1α]: Residues 36-41 of hMIP-1α
C-S-K-P-G-V (SEQ. ID. NO.: 92)
L amino acid

LFL $Cys_0Ser_{10}Cys_{16}$peptide 2(1-15)[MCP-1]: Residues 28-42 of hMCP-1
C-S-Y-R-R-I-T-S-S-K-S-P-K-E-A-V-C (SEQ. ID. NO.: 93)
L amino acids

CFL $Cys_0Ser_{10}Cys_{16}$peptide 2(1-15)[MCP-1]: Residues 28-42 of hMCP-1
C-S-Y-R-R-I-T-S-S-K-S-P-K-E-A-V-C (SEQ. ID. NO.: 111)
L amino acids

LRD $Cys_0Ser_{10}Cys_{16}$peptide 2(1-15)[[MCP-1]: Residues 28-42 of hMCP-1
c-v-a-e-k-p-s-k-s-s-t-i-r-r-y-s-c
D amino acids

CRD $Cys_0Ser_{10}Cys_{16}$peptide 2(1-15)[MCP-1]: Residues 28-42 of hMCP-1
c-v-a-e-k-p-s-k-s-s-t-i-r-r-y-s-c
D amino acids

FIG. 14F

SEQUENCE	DARC BINDING	THP-1 MIGRATION		
		MCP-1	MIP-1α	SDF-1α
SYRRITSSKCPKEAV	350nM	ns	ns	ns
VAEKPCKSSTIRRYS	18μM	ns	ns	ns
SYRRITSK	22μM	ns	ns	ns
SYRRI	>100μM	ns	ns	ns
TSSKC	>100μM	ns	ns	ns
CPKEAV	>100μM	ns	ns	ns
HLKILNTPNCALQIV	19μM	10μM	40μM	7μM
DYFETSSQCSKPGV	>100μM	ns	ns	ns
VGPKSCQSSTEFYD	>100μM	ns	ns	ns
DYFETSSQC	>100μM	ns	ns	ns
CSKPGV	>100μM	ns	ns	ns

FIG 15

SEQUENCE	MOL WT.	DUFFY BINDING BD-50	MCP-1 ED-50	MIP-1α ED-50	RANTES ED-50	SDF-1α ED-50	IL-8 ED-50	OTHER DATA
AQPDAINAPVTCC	1302	90μM	ns	ns	–	ns	ns	
SYRRITSSKCPKEAV	1725	100μM	ns	ns	–	ns	–	
VAEKPCKSSTIRRYS	1725	18μM	ns	ns	–	ns	–	
HLKILNTPNCALQIV	1677.3	19μM	10μM	40μM	–	7μM	–	
DYFETSSQCSKPGV	1549	>100μM	ns	ns	–	ns	–	
VQPKSCQSSTEFYD	1549	>100μM	ns	ns	–	ns	–	
SYRRITSSKC	1097.4	22μM	ns	ns	–	ns	–	
CPKEAV	645.8	>100μM	ns	ns	–	ns	–	
SYRRI	693.9	>100μM	ns	ns	–	ns	–	
TSSKC	525.7	>100μM	ns	ns	–	ns	–	
DYFETSSQC	1079.2	>100μM	ns	ns	–	ns	–	
CSKPGV	589.8	>100μM	ns	ns	–	ns	–	

FIG. 16A

SICADPKQKNVQ	1445	6μM	8μM	7.5μM	–	13.5μM	10μM	
CADPKQKNVQ	1202	–	8μM	6.5μM	–	9μM	8.5μM	
CQVWKQKPDAC	1305	3μM	100nM	–	–	–	–	
CQVWKQKPDAC	1305	40μM	30nM	–	–	–	–	
BICADP	647	–	25μM	20μM	–	18.5μM	16μM	
KQKWVQ	816	15μM	7μM	5μM	–	5.5μM	5μM	
BICLDPKQKWVQ	1487	–	8μM	7μM	–	2.5μM	3μM	
EICADPSQKWVQ	1404	25μM	7μM	5.5μM	–	4μM	3μM	
EICADPKQKWIQ	1459	–	5.5μM	3.5μM	–	7μM	2μM	
EICLDPKQKWIQ	1501	90μM	2μM	2μM	–	4μM	3.5μM	
WVQ	431.5	1μM	8μM	7.5μM	1.5μM	2.25μM	1μM	
KQK	464.5	50μM	7μM	>100μM	>100μM	>100μM	>100μM	
SEE	399.4	>100μM	>100μM	–	>100μM	>100μM	>100μM	
KEN	425.4	>100μM	>100μM	>100μM	>100μM	>100μM	–	

FIG.16B

KLK	516.6	>100μM	>100μM	>100μM	>100μM	–	>100μM	
CQIWKQKPDLC	1359	>100μM	1μM	–	–	350nM	10nM	NOTE 1
CQIWKQKPDLAC	1448	–	100nM	–	–	–	–	NOTE 2
CQIWKQKPDLC	1472.2	–	10nM	–	–	–	–	
SES	357.3	>100μM	>100μM	–	–	–	–	
KKK	609.8	>100μM	–	–	–	–	–	

NOTE1: IN VIVO EFFECT ABOLISHES MACROPHAGES IN AN IN VIVO RATE INTRADEMAL STUDY INDUCED BY 500 ng MCP-1, 300 g IV, AND 10mg SQ 30 MINUTES PRIOR TO MCP-1, D-ALA ("a") IS ATTACHED TO D-ASP ("d").
NORE 2: IN SAME STUDY AS NOTE 1 ABOVE, NO EFFECT ON MACROPHAGES SEEN

FIG.16C

STUDY DESIGN TABLE

GROUP	ANIMAL#	N	RX	RX DOSE/ROUTE T=30 MIN	DERMAL AGONIST	DERMAL AGONIST DOSE (ng IN 50 ul) T=0	HOUR OF SACRIFICE
1	1,2,3	3	PBS	200 ul:LV 200 ul:SQ BACK	PBS LPS MCP-1 MCP-1	0 50 100 500	20-24
2	4,5,6	3	NR58-3.14.3	3 ug:LV 100 ug:SQ BACK	PBS LPS MCP-1 MCP-1	0 50 100 500	20-24
3	7,8,9	3	NR58-3.14.3	30 ug:LV 1 mg:SQ BACK	PBS LPS MCP-1 MCP-1	0 50 100 500	20-24
4	10,11,12	3	NR58-3.14.3	300 ug:LV 10 mg:SQ BACK	PBS LPS MCP-1 MCP-1	0 50 100 500	20-24

FIG. 17